

Electrical Temporary Services Flexible Cord LOTO Procedures

Jim Durnan, PE, CSP
Brookhaven National Laboratory
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What you should know as the ESH Coordinator about Temporary Service



Time Constraints for Temporary Wiring

590.3 Time Constraints

A) During the Period of Construction.

B) 90 Days - Temporary electrical power and lighting installations shall be permitted for a period not to exceed 90 days for holiday decorative lighting and similar purposes.

Note that the 90-day time limit in 590.3(B) applies only to temporary electrical installations associated with holiday displays. Construction and emergency and test temporary wiring installations are not bound by this time limit.

Time Constraints for Temporary Wiring

- (C) Emergencies and Tests - Temporary electrical power and lighting installations shall be permitted during emergencies and for tests, experiments, and developmental work.
- (D) Removal - Temporary wiring shall be removed immediately upon completion of construction or purpose for which the wiring was installed.

Approval

590.2 (B) -Approval - Temporary wiring methods shall be acceptable only if approved based on the conditions of use and any special requirements of the temporary installation.
Note – Approval required by the AHJ.

Some Requirements You Should Know

- Protection from Accidental Damage - Flexible cords and cables shall be protected from accidental damage. Sharp corners and projections shall be avoided. Where passing through doorways or other pinch points, protection shall be provided to avoid damage.
- Support- Cable assemblies and flexible cords and cables shall be supported in place at intervals that ensure that they will be protected from physical damage.
- Ground-fault protection for personnel for all temporary wiring installations shall be provided. This section shall apply only to temporary wiring installations used to supply temporary power to equipment used by personnel during construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities.

Flexible Cords and Cables

400.1 Scope

This article covers general requirements, applications, and construction specifications for flexible cords and flexible cables.

Note in Handbook -Flexible cords and cables, because of the nature of their use, are not considered to be wiring methods. Wiring methods are covered in Chapter 3 of the Code. Careful study of 400.7, Uses Permitted, and 400.8, Uses Not Permitted, is required before choosing flexible cords or cables for a specific application.

Flexible Cords and Cables

Uses 400.7

Flexible cords and cables shall be used only for the following:

- (1) Pendants
- (2) Wiring of luminaires (fixtures)
- (3) Connection of portable lamps, portable and mobile signs, or appliances
- (4) Elevator cables
- (5) Wiring of cranes and hoists
- (6) Connection of utilization equipment to facilitate frequent interchange

Flexible Cords and Cables

Uses 400.7

- (7) Prevention of the transmission of noise or vibration
 - (8) Appliances where the fastening means and mechanical connections are specifically designed to permit ready removal for maintenance and repair, and the appliance is intended or identified for flexible cord connection
 - (9) Connection of moving parts
 - (10) Where specifically permitted elsewhere in this Code
- My Note -590.4(C) allows flexible cord and cable in Temporary Installations**

Flexible Cords and Cables

Uses Not Permitted 400.8

Unless specifically permitted in 400.7, flexible cords and cables shall not be used for the following:

- (1) As a substitute for the fixed wiring of a structure**
- (2) Where run through holes in walls, structural ceilings, suspended ceilings, dropped ceilings, or floors**
- (3) Where run through doorways, windows, or similar openings**
- (4) Where attached to building surfaces**

Exception to (4): Flexible cord and cable shall be permitted to be attached to building surfaces in accordance with the provisions of 368.56(B)

Note -Section 368.56(B) provides the requirements for the installation of flexible cords installed as branches from busways.

Flexible Cords and Cables

Uses Not Permitted 400.8

- (5) Where concealed by walls, floors, or ceilings or located above suspended or dropped ceilings**
- (6) Where installed in raceways, except as otherwise permitted in this Code**

Handbook note- The flexible cords and cables referred to in Article 400 are not limited to use with portable equipment. They may not be used, however, as a substitute for the fixed wiring of a structure or where concealed behind building walls, floors, or ceilings (including structural, suspended, or dropped-type ceilings). See 240.5, 590.4(B), and 590.4(C) for the uses of multiconductor flexible cords for feeder and branch-circuit installations and for overcurrent protection requirements for flexible cord. See 410.30 for cord-connected luminaires.

- (7) Where subject to physical damage**

Extension Cords

Extension Cords are referenced twice in the Code
On Construction sites 590.6
Under overcurrent protection 240.5

Extension Cords

240.5 Protection of Flexible Cords, Flexible Cables, and Fixture Wires

Flexible cord and flexible cable, including tinsel cord and extension cords, and fixture wires shall be protected against overcurrent by either 240.5(A) or (B).

(A) Ampacities - Flexible cord and flexible cable shall be protected by an overcurrent device in accordance with their ampacity as specified in Tables 400.5(A) and 400.5(B).

Extension Cords

- (B) Branch Circuit Overcurrent Device -Flexible cord shall be protected where supplied by a branch circuit in accordance with one of the methods described in 240.5(B)(1), (B)(2), (B)(3), or (B)(4).
 - (1) Supply Cord of Listed Appliance or Portable Lamps- Where flexible cord or tinsel cord is approved for and used with a specific listed appliance or portable lamp, it shall be considered to be protected when applied within the appliance or portable lamp listing requirements.
 - (deleted 2 –technical about branch circuit protection)
 - (3) Extension Cord Sets -Flexible cord used in listed extension cord sets shall be considered to be protected when applied within the extension cord listing requirements.
 - (4) Field Assembled Extension Cord Sets - Flexible cord used in extension cords made with separately listed and installed components shall be permitted to be supplied by a branch circuit in accordance with the following:

LOTO Requirements

Changes in the New Subject Area

LOTO Requirements

A specific procedure is not required when all of the following elements exist:

1. The machine or equipment has no potential for stored or residual energy or re-accumulation of stored energy after shut down, which could endanger employees;
2. The machine or equipment has a single energy source, which can be readily identified and isolated;
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment;
4. The machine or equipment is isolated from that energy source and locked out during servicing or maintenance;
5. A single lockout device will achieve a locked-out condition;
6. The lockout device is under the exclusive control of the Authorized Employee performing the servicing or maintenance;
7. The servicing or maintenance does not create hazards for other employees; and
8. The Department/Division, in utilizing this exception, has had no accidents involving the unexpected activation or re-energization of the machine or equipment during servicing or maintenance.

LOTO Requirements

Section 1 Step 4

Ensure that Periodic Inspections (Audits) are performed at least annually, of at least one LOTO in progress and, if required, the procedure in detail.

- The Inspector (an Authorized Employee **must keep a record of the LOTO procedure being audited, the date, the Employees performing the procedure, and the person performing the inspection.**
- The Inspection must be designed to correct any deficiencies in the procedure.
- Where tagout only is used for energy control, the inspection must include a review of the limitations of tagout only